Séminaire de Eniko Szekely à l'IPSL

Name : Séminaire de Eniko Szekely à l'IPSL

Title : A direct approach to detection and attribution of climate change

Laboratory :

Name of the speaker :

Affiliation :

Date and time : 24-01-2020 14h30

Location : Campus Pierre et Marie Curie de Sorbonne Université dans la salle 105 du LIP6 couloir 25-26 au 1er étage

Summary :

In this talk I will present a novel statistical learning approach for detection and attribution (D&A) of climate change. Traditional optimal D&A studies try to directly model the observations from model simulations, but practically this is challenging due to high-dimensionality. Here, we propose a supervised approach where we predict a given metric or external forcing directly from the high-dimensional spatial pattern of climate variables, and use the predicted metric as a test statistic for D&A. The first part of the talk will focus on daily detection and show that we can now detect climate change from global weather for any single day since spring 2012. The second part of the talk will focus on attribution of climate change. For attribution, we want the prediction of the external forcing, e.g., anthropogenic forcing, to work well even under changes in the distribution of other external forcings, e.g., solar or volcanic forcings. Therefore we formulate the optimization problem from a distributional robustness perspective, and use anchor regression to ensure good predictions even under such distributional changes.

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